

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): Multicapillary electrophoresis system comprising a plurality of juxtaposed capillaries, at least one source configured for the emission of a light beam intended to excite molecules lying in its path and inside the capillaries and means for detecting the fluorescence of the molecules excited by said light beam, wherein said means are arranged so as to detect light which emerges at the exit of said capillaries and which propagates along the direction in which said capillaries extend, the resolution of the detection means is high enough to distinguish light which emerges at the exit of each of the capillaries, a first liquid is disposed outside of the capillaries, and a second liquid is disposed inside of the capillaries, the first liquid has a first refractive index and the second liquid has a second refractive index, wherein said first refractive index is equal to or superior to said second refractive index, and a mirror is facing the at least one source on the side of the capillaries which is opposed to said source.

Claim 2 (Previously Presented): The multicapillary electrophoresis system according to claim 1, wherein the resolution of the detection means is high enough to distinguish the light which emerges at the exit of each of the capillaries from that coming from walls of the capillaries and/or from a liquid medium which surrounds the capillaries.

Claim 3 (Previously Presented): The multicapillary electrophoresis system according to claim 1, said plurality of juxtaposed capillaries forming at least one linear array.

Claim 4 (Previously Presented): The multicapillary electrophoresis system according to claim 1, wherein the light beam is of elongate cross section and strikes several juxtaposed capillaries simultaneously.

Claim 5 (Previously Presented): The multicapillary electrophoresis system according to claim 3, further including means for producing multiple focusing for the light beam on the at least one linear array.

Claim 6 (Previously Presented): The multicapillary electrophoresis system according to claim 3, wherein the light beam exiting a side of one capillary of the at least one linear array of capillaries is focused onto an adjacent juxtaposed capillary within another linear array of capillaries following the at least one linear array of capillaries.

Claim 7 (Previously Presented): The multicapillary electrophoresis system according to claim 6, wherein a space between the capillaries is filled, at least along the path of the excitation beam, with the first liquid, wherein the first refractive index is chosen so that the light beam does not diverge after having traveled through a capillary.

Claim 8 (Previously Presented): The multicapillary electrophoresis system according to claim 5, wherein said second liquid is transparent and non-fluorescent.

Claims 9-10 (Canceled)

Claim 11 (Previously Presented): The multicapillary electrophoresis system according to claim 1, wherein the detection means provide a complete image of the light exiting the capillaries.

Claim 12 (Previously Presented): The multicapillary electrophoresis system according to claim 1, wherein the detection means is a charge-coupled device (CCD) having beam focusing capability.

Claim 13 (Previously Presented): The multicapillary electrophoresis system according to claim 1, wherein the detection means is a charge-coupled device (CCD) and a fiber bundle interposed between the exits of the capillaries and the CCD.

Claims 14-15 (Canceled)

Claim 16 (Previously Presented): The multicapillary electrophoresis system according to claim 1 wherein the portion of the outside of the wall of the capillaries between the impact of the excitation beam and the end of the capillaries is blackened.

Claim 17 (Previously Presented): The multicapillary electrophoresis system according to claim 16 wherein the capillaries are glued on a support.

Claim 18 (Previously Presented): The multicapillary electrophoresis system according to claim 17, wherein the capillaries are glued on the support using a non transparent glue.

Claim 19 (Previously Presented): The multicapillary electrophoresis system according to claim 1, wherein the capillaries are fixed on a support with glue and one end of the capillaries is disposed in a cell under pressure, said glue suitable to resist the internal pressure of the cell.

Claim 20 (Previously Presented): The multicapillary electrophoresis system according to claim 1, wherein the distance between the impact of the excitation beam on the capillaries and the end of the capillaries is between 6 to 30 times the internal diameter of the capillaries.

Claim 21 (Canceled)

Claim 22 (Previously Presented): The multicapillary electrophoresis system according to claim 5, wherein said means for producing multiple focusing of the light beam on the at least one linear array of capillaries comprises microlenses positioned juxtaposed to the at least one linear array of capillaries.

Claim 23 (Previously Presented): A multicapillary electrophoresis system comprising:

a plurality of juxtaposed capillaries each having an entrance and an exit,
at least one source configured for the emission of a light beam intended to excite molecules lying in its path and inside the plurality of juxtaposed capillaries and means for detecting the fluorescence of the molecules excited by said light beam, wherein said means are arranged so as to detect light which emerges at the exit of said plurality of juxtaposed capillaries and which propagates along a direction in which said plurality of juxtaposed capillaries extend, the resolution of the detection means is high enough to distinguish the light which emerges at the exit of each of the plurality of

juxtaposed capillaries, and a portion of the outside of a wall of the capillaries between the impact of the excitation light beam and the exit of the capillaries extending to the end of the capillaries is blackened.

Claim 24 (Previously Presented): The multicapillary electrophoresis system according to claim 23, wherein the resolution of the detection means is high enough to distinguish the light which emerges at the exit of each of the plurality of juxtaposed capillaries from that coming from walls of the latter and/or from a first liquid which surrounds the plurality of juxtaposed capillaries.

Claim 25 (Previously Presented): The system according to claim 23, further including said plurality of juxtaposed capillaries forming at least one linear array.

Claim 26 (Previously Presented): The system according to claim 23, wherein the excitation light beam is of elongate cross section and strikes several juxtaposed capillaries simultaneously.

Claim 27 (Previously Presented): The system according to claim 25, further including means for producing multiple focusing of the light beam on a linear array of capillaries.

Claim 28 (Previously Presented): The system according to claim 25, wherein the beam exiting a side of one capillary of one linear array is focused onto an adjacent juxtaposed capillary within a following linear array.

Claim 29 (Previously Presented): The system according to claim 28, further including a space between the capillaries of the plurality of juxtaposed capillaries is filled, at least along the path of the excitation beam, with a liquid whose refractive index is chosen so that the excitation light beam does not diverge after having traveled through a capillary of the plurality of juxtaposed capillaries.

Claim 30 (Previously Presented): The system according to claim 29, wherein said liquid is transparent and non-fluorescent.

Claims 31-32 (Canceled)

Claim 33 (Previously Presented): The system according to claim 23, wherein the detection means provide a complete image of the light exiting the plurality of juxtaposed capillaries.

Claim 34 (Previously Presented): The system according to claim 23, wherein the detection means is a charge-coupled device (CCD) with focusing capability.

Claim 35 (Previously Presented): The system according to claim 23, wherein the detection means is a charge-coupled device (CCD) and a fiber bundle interposed between the exits of the capillaries of the plurality of juxtaposed capillaries and the CCD.

Claim 36 (Previously Presented): The system according to claim 23, wherein a first refractive index of a first liquid outside of the of the plurality of juxtaposed capillaries is less than that of a second liquid inside of the of the plurality of juxtaposed capillaries.

Claim 37 (Previously Presented): The system according to claim 23, further including the plurality of juxtaposed capillaries are glued on a support using a non-transparent glue.

Claim 38 (Previously Presented): The system according to claim 23, wherein the distance between the impact of the excitation light beam on the plurality of juxtaposed capillaries and the exit of the plurality of juxtaposed capillaries is between 6 to 30 times the internal diameter of each of the capillaries of the plurality of juxtaposed capillaries.

Claim 39 (Previously Presented): The system according to claim 23, wherein a mirror is facing the at least one source on the side of the capillaries which is opposed to said source.

Claim 40 (Previously Presented): The system according to claim 27, wherein said means for producing multiple focusing of the light beam on a linear array of capillaries comprises microlenses positioned juxtaposed to the linear array of capillaries.